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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,344	12/11/2003	Aris Papasakellariou	TI-36340	3656

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EXAMINER	
AGHDAM, FRESHTEH N	
ART UNIT	**PAPER NUMBER**
2611	

NOTIFICATION DATE	DELIVERY MODE
09/07/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@ti.com
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Office Action Summary	Application No.	Applicant(s)	
	10/734,344	PAPASAKELLARIOU, ARIS	
	Examiner	Art Unit	
	Freshteh N. Aghdam	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 7-9, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindoff et al (US 2002/0173286), and further in view of the instant application's disclosed prior art.

As to claims 1-2, 7-9, and 14, Lindoff discloses a mobile communication system comprising receiving a spread spectrum signal, which includes training or pilot signal (Par. 3; Fig. 5, Ts), wherein channel equalization within the receiver includes measuring the speed of the mobile communication device (e.g. Doppler frequency; Par. 42); measuring a channel quality indicator (such as SNR; Par. 42); using the speed measurement and channel quality measurement to determine a value for the adaptation coefficient (Hopt) of an adaptive equalizer through model validation unit (Par. 43); and using the adaptation coefficient and said adaptive equalizer to perform equalization of

the data signal. Lindoff is silent about transmitting the pilot or training signal over common pilot channel and transmitting the data portion over the dedicated data channel (DPDCH). One of ordinary skill in the art would recognize that the transmitting the pilot signal over common pilot channel is well known in the art and it is advantageous because the pilot or training signal can be decoded by all the mobile stations in order to preserve bandwidth as it is evidenced by the instant application's disclosed prior art (Pg. 2, Par. 2). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindoff et al and the instant application's disclosed prior art, further in view of Qiu (US 6,785,351).

As to claims 3 and 10, Lindoff and the instant application's disclosed prior art disclose all the subject matter claimed in claims 1 and 8, except for the channel quality indicator is signal to noise ratio of at least one DPDCH signal. Qiu discloses a receiver system that utilizes at least one the data signal for channel estimation (Col. 7, lines 21-

40). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Qiu with Lindoff and the instant application's disclosed prior art in order to provide a channel estimation scheme with a good performance in a communication channel having varying frequency and time characteristics, while preserving the usable bandwidth of the communication channel by utilizing the data signal for channel estimation.

Claims 4-6 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindoff et al and the instant application's disclosed prior art, further in view of Hooli et al (Chip-Level Channel Equalization in WCDMA Downlink, EURASIP Journal on Applied Signal Processing 2002:8, pages 757-770, 2002 Hindawi Publishing Corporation).

As to claims 4 and 11, Lindoff and the instant application's disclosed prior art disclose all the subject matter claimed in claims 1 and 8, except for the adaptive equalizer is a NLMS (normalized least mean squared) adaptive equalizer. Hooli discloses a terminal receiver in a WCDMA communication system that utilizes an adaptive NLMS equalizer, wherein utilizing an adaptive NLMS equalizer is the most straightforward solution to the adaptation of a chip level equalizer and consequently detection/ estimation of the transmitted data in the receiver (Pg. 760, Section 4.1; Fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Hooli with Lindoff and the instant application's disclosed prior art for the reason stated above.

As to claims 5 and 12, Lindoff and the instant application's disclosed prior art disclose all the subject matter claimed in claims 1 and 8, except for the adaptive equalizer is a Griffiths adaptive equalizer. Hooli discloses a terminal receiver in a WCDMA communication system that utilizes an adaptive Griffiths equalizer, wherein utilizing the Griffiths algorithm is a preferred method when a training sequence is not available or is not reliable ([Pg. 761, Section 4.2). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Hooli with Lindoff and the instant application's disclosed prior art for the reason stated above.

As to claims 6 and 13, Lindoff and the instant application's disclosed prior art disclose all the subject matter claimed in claims 1 and 8, except for the adaptive equalizer is a prefilter rake adaptive equalizer. Hooli discloses a terminal receiver in a WCDMA communication system that utilizes an adaptive prefilter rake adaptive equalizer, wherein utilizing a prefilter rake adaptive equalizer provides a significant increase of performance for high data rates. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Hooli with Lindoff and the instant application's disclosed prior art for the reason stated above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lindoff (US 6,373,888) see figure 4.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is 571-272-6037. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Freshteh Aghdam
Examiner
Art Unit 2611

August 23, 2007

Chieh Fan

CHIEH M. FAN
SUPERVISORY PATENT EXAMINER